

a processing unit which controls the magnetic disk drive;
a magnetic disk medium;
a magnetic head which reads information on the magnetic disk medium; and
an electronic circuit which has a function to amplify information read from the magnetic disk medium, a function to detect back electromotive force as an analog value from a VCM actuator, a function to convert the back electromotive force detected as an analog value to a digital value, and a function to transfer the amplified information to the processing unit;

wherein the magnetic disk drive executes an idle seek operation by using the back electromotive force of the VCM actuator without amplifying the information read from the magnetic disk medium; and

if the magnetic disk medium has 8000 cylinders, then a direction of the idle seek is reversed when the magnetic head is in a range from the 0th cylinder to the 500th cylinder and in a range from the 7500th cylinder to the 8000th cylinder on the magnetic disk medium.

REMARKS

This Amendment is responsive to the Office Action identified above, and in any manner indicated below.

REPLACEMENT TITLE

The title of the application has been amended, and is believed to be sufficiently descriptive of the invention to which the claims are directed. In the event

that the present replacement title is itself found not to be sufficiently descriptive, the Examiner is herein authorized to amend to a suitable replacement title.

PENDING CLAIMS

Claims 1-9 were pending in the application at the time of the Office Action, under consideration and subject to examination in the Office Action. Unrelated to any prior art rejection, appropriate claims have been amended or deleted in order to adjust a clarity and/or focus of Applicant's claimed invention. The amendments to the claims are unrelated to any scope adjustment, and are simply clarified claims in which Applicant is presently interested. At entry of this paper, Claims 1-8 remain pending for further consideration and examination in the application.

ALLOWED/ALLOWABLE CLAIMS

At Item 7 on page 4 of the Action, Claim 6 is indicated as being allowed, and Claim 8 is indicated as being allowable if rewritten into independent form, including all of the limitations of the base claim. Claim 8 has been so amended within this paper. Therefore, indication of allowance of both Claims 6 and 8 is respectfully requested. Applicant and the undersigned respectfully thank the Examiner for such indications.

REJECTION UNDER 35 USC §102 (CLAIM CANCELED)

The §102 rejection of Claim 9 as being anticipated by Shioya *et al.* (US 5,606,470) are respectfully traversed, but the present cancellation of such claim (without prejudice or disclaimer) has rendered such rejections and traversal

arguments obsolete at this point in time. Based upon the following, reconsideration and withdrawal of such rejections are respectfully requested.

REJECTION UNDER 35 USC § 103 - TRAVERSED

The §103 rejection of Claims 7 and 9 as being unpatentable over Funches (US 5,844,743) in view of Shioya *et al.* are respectfully traversed, but such rejection has been rendered obsolete. More particularly, as Claim 9 has been cancelled without prejudice or disclaimer of any scope or subject matter in this paper. Further, claim 7 (as well as claims 1-5) have been clarified. While traversal arguments are not appropriate in view of the above, Applicant wishes to submit the following to preclude any renewal of the §103 rejection with respect to Applicant's clarified claims.

All descriptions of Applicant's disclosed and claimed invention, and all descriptions and rebuttal arguments regarding the applied prior art, as previously submitted by Applicant in any form, are repeated and incorporated herein by reference. Further, all Office Action statements regarding the prior art rejections are respectfully traversed. As additional arguments, Applicant respectfully submits the following.

In order to properly support a §103 obviousness-type rejection, any applied art reference must not only teach the claimed limitations, but also contain the suggestion to modify the art to arrive at an approximation of the claimed invention. The applied art does not adequately support a §103 obviousness-type rejection because, at minimum, such applied art does not disclose (or suggest) the following discussed limitations of Applicant's claims.

Applicant's disclosed and claimed invention as recited in clarified Claims 1-5 is directed to arrangements (e.g., methods, apparatus, etc.) allowing a low-power idle seek operation to be conducted. One important feature of Applicant's invention is that head movement is conducted in one direction with various reading-related circuits biased down, and then, after momentarily re-empowering the reading-related circuits to read a real-time position of a head with respect to the medium, the head movement is reversed in the other direction again with the various reading-related circuits biased down. The back and forth head movement guarantees that the medium does not get overly worn in any one spot by the idle seek operation.

Neither of the previously-applied Funches, nor newly-applied Shioya et al., references teaches or suggests a reversing back and forth movement.

With regard to Applicant's disclosed and claimed invention as claimed in clarified Claim 7, such invention is again directed to allowing a low-power idle seek operation to be conducted. One important feature of Applicant's invention is that head movement is conducted in one direction at a certain velocity with various reading-related circuits biased down, and then the reading-related circuits are momentarily re-empowered to read a real-time position of a head with respect to the medium. The target velocity is set with the desire that the reading-related circuits become re-empowered near an end of idle seek travel in one direction, *i.e.*, near the inner-most or outer-most portion of the medium. However, due to temperature and other environmental variations over time, a travel velocity of magnetic velocity will change over time, so that the target velocity will need adjustment over time. Accordingly, Applicant's disclosed and claimed invention includes the feature/limitations "wherein the processing unit can set a target velocity, the

magnetic disk drive executes an idle seek operation by using the back electromotive force of the VCM actuator without amplifying the information read from the magnetic disk medium, and has a function to amplify, after the idle seek operation, the information read from the magnetic disk medium, to obtain information concerning the position of the magnetic head, and then to calibrate a velocity of said idle seek position." Accordingly, there is a real-time calibration of a idle seek target velocity over time.

Neither of the Funches nor Shioya *et al.* references teaches or suggests Applicant's real-time calibration of a idle seek target velocity over time.

As a result of all of the foregoing, it is respectfully submitted that the applied art (taken alone and in the Office Action combinations) would not support a §103 obviousness-type rejection of Applicant's claims. Accordingly, reconsideration and withdrawal of such §103 rejection, and express written allowance of all of the §103 rejected claims, are respectfully requested.

INDICATION OF CHANGES MADE

Attached hereto is an "Appendix A-Marked Version" with additions and deletions shown by underlining and bracketing, respectively, for the portions of the application amended herein.

EXAMINER INVITED TO TELEPHONE

The Examiner is herein invited to telephone the undersigned attorneys at the local Washington, D.C. area telephone number of 703-312-6600 for discussing any

Examiner's Amendments or other suggested actions for accelerating prosecution and moving the present application to allowance.

CONCLUSION

A Petition for a two-month extension of time and requisite fee are submitted concurrently herewith. To whatever other extent is actually possible and appropriate, please charge any shortage in any fees due in connection with this application to ATS&K Deposit Account No. 01-2135 (Order No. 501.38264X00).

Respectfully submitted,



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ATTACHMENTS:

Appendix A-Marked Version
Petition for Extension of Time
Form PTO-2038 (\$410)